

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application. Please amend Claims 54, 58, and 63-64 as indicated in the following Listing of Claims. Please add new Claim 68.

### **Listing of Claims**

- 1-36. (Canceled)
37. (Previously presented) A method of mixing two or more dissimilar fluids comprising:
- (a) introducing one or more fluids into another fluid to form a mixture;
  - (b) introducing the mixture into a region comprising a plurality of cavitation zones to reduce at least one of the fluids to a large number of relatively small units, each cavitation zone having a void zone adjacent thereto; and
  - (c) distributing the small units substantially throughout the mixture.
38. (Previously presented) The method of Claim 37, wherein at least one of the fluids is a gas, and the gas is reduced to a large number of relatively small bubbles.
39. (Previously presented) The method of Claim 38, wherein at least one fluid is oxygenated by the gas.
40. (Previously presented) The method of Claim 38, wherein a component within the mixture is oxidized by the gas.
41. (Previously presented) The method of Claim 37, wherein at least two fluids are liquids and the method results in emulsification of the liquids.

42. (Withdrawn) The method of Claim 37, wherein one of the fluids is an emulsion, and the method results in separation of the emulsion into its constituent components.
43. (Withdrawn) The method of Claim 37, wherein one of the fluids is a liquid having particles suspended therein.
44. (Withdrawn) The method of Claim 37, wherein one of the fluids is a liquid having particles suspended therein and one of the fluids is a gas, the method resulting in gas flotation of the particles to separate the particles from the liquid.
45. (Withdrawn) The method of Claim 37, wherein one of the fluids is a heated gas and one of the fluids is a liquid, the method resulting in a transfer of heat from the heated gas to the liquid.
46. (Previously presented) The method of Claim 37, wherein one of the fluids is a fuel and one of the fluids is a gas, the method resulting in atomization of the fuel for enhanced burning efficiency.
47. (Previously presented) The method of Claim 37, wherein at least one of the fluids is ozone, oxygen, air, or any combination thereof.
48. (Previously presented) The method of Claim 37, wherein the mixture is a pulp slurry, wastewater, an emulsion, or a solution.
49. (Withdrawn) The method of Claim 37, wherein at least one of the fluids contains pulp.
50. (Withdrawn) The method of Claim 49, wherein the pulp is oxidized.

51. (Previously presented) The method of Claim 37, wherein the region comprises a chamber having a rotor formed with a plurality of irregularities, the irregularities on the rotor inducing cavitation within the mixture.
52. (Previously presented) The method of Claim 51, wherein the irregularities on the rotor comprise bores formed therein.
53. (Previously presented) The method of Claim 52, wherein cavitation occurs within the bores.
54. (Currently amended) A method of oxidizing a molecular compound within a fluid comprising:
- (a) introducing an oxidizer into the fluid to form a mixture;
  - (b) introducing the mixture into a region comprising a plurality of cavitation zones to reduce the oxidizer into a large number of relatively small units and increase the total surface area of the oxidizer in contact with the molecular compound within the fluid, each cavitation zone having a void zone adjacent thereto; and
  - (c) distributing the units of oxidizer substantially throughout the ~~fluid~~ mixture.
55. (Previously presented) The method of Claim 54, wherein the fluid is a fuel to be burned and wherein the molecular compound, when not oxidized, generates environmental toxins upon burning of the fuel.
56. (Previously presented) The method of Claim 54, wherein the oxidizer is oxygen.
57. (Previously presented) The method of Claim 54, wherein the oxidizer is air.

58. (Currently amended) A method of mixing a gas and a liquid comprising:
- (a) introducing the gas into the liquid to form a mixture;
  - (b) introducing the mixture into a region comprising a plurality of cavitation zones to reduce the gas to microscopic bubbles, each cavitation zone having a void zone adjacent thereto; and
  - (c) distributing the microscopic bubbles of gas substantially throughout the liquid mixture.
59. (Previously presented) A method of conducting a chemical reaction between two or more dissimilar fluids comprising:
- (a) introducing one or more fluids into another fluid to form a mixture, wherein at least one of the one or more fluids is chemically reactable with the another fluid;
  - (b) introducing the mixture into a region comprising a plurality of cavitation zones to reduce at least one of the fluids to a large number of relatively small units, each cavitation zone having a void zone adjacent thereto; and
  - (c) distributing the small units substantially throughout the mixture to conduct the chemical reaction.
60. (Previously presented) The method of Claim 59, wherein the at least one or more fluids has at least one reactant reactable with the another fluid.
61. (Previously presented) The method of Claim 59, wherein the at least one or more fluids has at least one first reactant and the another fluid has at least one second reactant reactable with the first reactant.

62. (Previously presented) A method of mixing two or more dissimilar fluids comprising:

(a) introducing at least one first fluid and at least one second fluid into a region comprising a plurality of cavitation zones to reduce at least one fluid of the at least one first fluid to a large number of relatively small units, each cavitation zone having a void zone adjacent thereto; and

(b) distributing the small units of the at least one fluid of the at least one first fluid substantially throughout the at least one second fluid to form a mixture.

63. (Currently amended) A method of oxidizing a molecular compound within a fluid comprising:

(a) introducing an oxidizer and the fluid into a region comprising a plurality of cavitation zones to reduce the oxidizer to a large number of relatively small units, each cavitation zone having a void zone adjacent thereto; and

(b) distributing the small units of oxidizer substantially throughout the ~~mixture~~ fluid to oxidize the molecular compound.

64. (Currently amended) A method of mixing a gas and a liquid comprising:

(a) introducing the gas and the ~~fluid~~ liquid into a region comprising a plurality of cavitation zones to reduce the gas to microscopic bubbles, each cavitation zone having a void zone adjacent thereto; and

(b) distributing the microscopic bubbles of gas substantially throughout the liquid.

65. (Previously presented) A method of conducting a chemical reaction between two or more dissimilar fluids comprising:

(a) introducing at least one first fluid and at least one second fluid reactable with the at least one first fluid into a region comprising a plurality of cavitation zones to reduce at least one fluid of the at least one first fluid to a large number of relatively small units, each cavitation zone having a void zone adjacent thereto; and

(b) distributing the small units of the at least one fluid of the at least one first fluid substantially throughout the at least one second fluid to conduct the chemical reaction.

66. (Previously presented) The method of Claim 65, wherein the at least one first fluid has at least one reactant reactable with the at least one second fluid.

67. (Previously presented) The method of Claim 65, wherein the at least one first fluid has at least one first reactant and the at least one second fluid has at least one second reactant reactable with the first reactant.

68. (New) The method of Claim 37, wherein at least one of the two or more dissimilar fluids is air and at least another of the two or more dissimilar fluids is fuel oil.